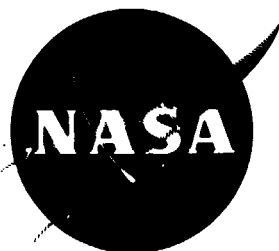


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NASA CR-134807



REGISTER OF SPECIALIZED SOURCES FOR INFORMATION
ON SELECTED FUELS AND OXIDIZERS

by Paul R. Ludtke

NATIONAL BUREAU OF STANDARDS

prepared for

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Aerospace Safety Research and Data Institute

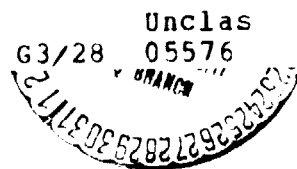
Lewis Research Center

NASA Order C-21352-C

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SOURCES FOR INFORMATION ON SELECTED FUELS
AND OXIDIZERS (National Bureau of Standards)
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15. Supplementary Notes Project Manager, Paul M. Ordin, and Technical Advisor, George Mandel, both of Aerospace Safety Research and Data Institute, Lewis Research Center, Cleveland, Ohio 44135					
16. Abstract This Register describes thirty-eight (38) organizations that catalog and file information in their data systems on fuel and oxidizers. The fuels include hydrogen, methane (LNG) and hydrazine-type fuels (UDMH); the oxidizers include oxygen, fluorine, flox, nitrogen tetroxide and ozone. The type of available information covers thermophysical properties, propellant systems, propellant fires-control-extinguishment, propellant explosions, propellant combustion, propellant safety, and fluorine chemistry. These organizations have assembled and collated their information so that it will be useful in the solution of engineering problems.					
17. Key Words (Suggested by Author(s)) Combustion; Cryogenic fluid safety; Handling; Fires; Explosions; Chemical reactions; Hydrogen; Safety information; Oxidizers; Oxygen; Propellants; Fuels; Thermodynamic properties				18. Distribution Statement Unclassified - unlimited	
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FOREWORD

The purpose of this Register is to present, in easy reference form, sources of dependable information on fuels and oxidizers used for rocket propulsion systems and other energy systems. The fuels include hydrogen, methane (LNG), and hydrazine-type fuels (UDMH); the oxidizers include oxygen, fluorine, flox (fluorine-oxygen mixtures), nitrogen tetroxide and ozone.

These organizations and their staff members provide technical information in the form of documentation, data, and a few offer consulting expertise. These will be sources that have assembled and collated their information so that it will be useful in the solution of engineering problems.

To present the contents of this Register in a useful way, major subject terms identify and describe the expertise of the organizations and their staff members. These subject terms were selected to reflect safety-related problem areas. The terms applicable to the subject of Fuels and Oxidizers are underlined.

This Register is recognized as being an incomplete listing, and subsequent updating is contemplated. Nevertheless, it should be a significant contribution to those seeking information on selected fuels and oxidants. Additional candidates for a more comprehensive Register are encouraged.

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Information Source:

Aerospace Research Applications Center
Poplars Research and Conference Center
Indiana University
Bloomington, Indiana 47401
Phone: (812)337-7833

Director:

Shriner, R. D.

Mission:

To provide in-depth access to the world's technical information resources.
To help industry get more return from federal R&D conducted by NASA and other government agencies.

Major Subject Terms:

Adhesives; Chemistry; Chemical Engineering; Composites; Electrical Engineering; Fuels; Graphite; Lubricants; Mechanical Engineering; Mathematical sciences; Metals forming and fabricating; Nuclear sciences; Physical sciences; Physics; Space sciences.

Holdings:

Books; abstracts/indexes; reports and reprints; periodicals; reference lists/bibliographies; standards and specifications; graphics/tables; statistical compilations.

Internal Publications:

Handbooks/manuals; abstracts; indexes; reference lists/bibliographies; magnetic tape bibliographic data; special reports.

Reference and Query Services:

Technical assistance and information services provided on an individual basis; retrospective and current awareness literature services; background reports, feasibility studies, state-of-the-art reviews, technology forecasting studies, and related projects; also reproduction/publication services.

Information Source:

Aerospace Safety Research and Data Institute (ASRDI)
NASA-Lewis Research Center
21000 Brookpark Road
Cleveland, Ohio 44135
Phone: (216)443-4000

Acting Director:

Weiss, S.

Staff Subject Specialists:

Name	Subject Specialty	Tel. No. and Ext.(x)
Weiss, S.	Aircraft Operating Problems	(216)433-4000 x 6898
Ordin, P. M.	Cryogenic Fluids Safety	(216)433-4000 x 6941
Siewert, R.	Fragmentation and Explosions	(216)433-4000 x 6564
Mandel, G.	Technical Safety Information	(216)433-4000 x 6285
Schmidt, H.	Propellant Safety	(216)433-4000 x 6685

Mission:

To support NASA, its contractors and the aerospace industry with technical information and consultation on safety problems; to identify areas where safety problems and technology voids exist and to initiate research programs both in-house and on contract in these problem areas; to author and compile state-of-the-art and summary publications in our areas of concern; to establish and operate a Safety Data Bank which includes a file of Specialized Information Sources (organizations) and experts in the specific areas or fields of ASRDI's interests.

Research and Development Activities:

Performs safety-related projects at the Lewis Research Center, other NASA centers and on contract. Projects include aircraft operations safety research in areas of lightning hazards to aerospace systems, rotor burst protection for aircraft, aircraft braking system and aircraft fire technology. Space operations safety research studies involving the storage, transportation and handling of cryogenic fluids and propellants, risk assessments in explosions and fragmentations; investigation of ignition susceptibility of materials in oxygen and fire extinguishment studies under low gravity conditions.

Major Subject Terms:

Aerospace safety engineering; aircraft operating problems; cryogenic safety; fire, explosion, and detonations; hazardous materials; launch base operations; mechanics of structural failure; propellants and fuels; safety analysis; safety manuals; safety standards; space vehicle problems.

Internal Publications:

Handbooks/manuals; technical reports; reference lists/bibliographies; magnetic tape bibliographic data.

Remarks:

ASRDI's expertise is safety technology in the areas of propellant safety; cryogenic fluid safety; fire, explosions, and detonations; and aircraft operating problems (such as altimetry, improved braking materials and runway, and rotor burst fragmentation studies). Research is being pursued on the mechanics of structural failure and structural materials limitations.

Information Source:

Air Force Institute of Technology Library (AFIT/LD)
Building 640, Area "B"
Wright-Patterson Air Force Base, Ohio 45433
Phone: (513)255-3005

Director:

Vincze, Tibor

Areas of Interest:

Aeronautical engineering, including aeronautics, aerodynamics, and aircraft design; electrical engineering, including circuits, communication systems, feedback systems, control theory, and systems reliability; mathematics, including statistics, calculus, computer programming, numerical analysis, and stochastic processes; mechanical engineering, including kinematics, thermodynamics, propulsion systems, heat transfer, gas dynamics, qualitative analysis, and physical and organic chemistry; mechanics, including geology, aerospace structures, aeroelasticity, space and lunar sciences, and metallurgy; physics, including astronomy, optics, quantum mechanics, solid state, nuclear, plasma, and bioastronautics; systems management, including accounting, economics, law, operations research, and management information systems; humanities, including report writing, English, communications, literature, and languages; civil engineering, including military construction, pavement engineering, air conditioning, soils, and corrosion control; logistics, including management, economic and cost analysis, statistics, procurement and production, data management, quality control, reliability, and business law; weapon systems, including systems engineering, program management, acquisition, and support systems.

Holdings:

80,000 books; 1,230 periodical titles; 100,000 scientific and technical reports; 130 bibliographies; 4,460 theses.

Reference and Query Services:

Answers inquiries; provides reference and literature-searching services; makes interlibrary loans. Services are primarily for the Institute students and faculty, but others are served when time and security regulations permit.

Information Source:

Air Force Rocket Propulsion Laboratory (AFRPL)
Technical Information Branch
Edwards Air Force Base, California 93523
Phone (714)553-2901

Director:

Sterling, K. E.

Major Subject Terms:

Rocket propulsion; Rocket motors; Liquid propellant rocket engines; Electric propulsion; Solid propellant rocket engines; Hybrid rocket engines; Solid rocket propellants; Liquid rocket propellants; Subsystems.

Holdings:

Library contains 7,785 books, 270 periodical titles and 19,600 technical reports (the latter mainly on Microfiche); 4,754 bound periodicals.

Internal Publications:

Technical document announcement service; Biennial annotated bibliography of in-house and contractor reports, with AD numbers cited; Technical reports; Annual progress reports.

Reference and Query Services:

Referral, types of services, research and development, literature surveys, indexing, SDI (Selective Dissemination of Information).

Remarks:

The Air Force Rocket Propulsion Laboratory is the focal point for planning and executing the AFSC exploratory and advanced development programs in rocket propulsion systems, components, propellants and associated ground support equipment.

Information Source:

Technical Information Service
American Institute of Aeronautics and Astronautics
750 Third Ave.
New York, N.Y. 10017
Phone: (212)867-8300

Director: Thomas J. Meskel

Areas of Interest:

Aeronautics and astronautics, including aerodynamic deceleration systems; air breathing propulsion; aircraft design; aircraft operations; astrodynamics; astronomy; astrophysics; atmospheric environment; atmospheric flight mechanics; communications; electric power systems; electric propulsion; electronics; entry vehicles; flight testing; fluid dynamics; ground systems and equipment; ground testing and simulation; guidance and control; instrumentation; launch vehicles and missiles; law; life sciences and systems; liquid rockets; management; marine systems; materials; mathematics; meteorology; nuclear propulsion; physics; plasma-dynamics; propellents and combustion; reliability and maintainability; solid rockets; space and atmospheric physics; spacecraft; structural dynamics; structures; thermophysics; underwater propulsion.

Holdings:

15,000 books; 2,000 pamphlets; 60,000 reports; 1,500 current serial titles in various languages and translations; extensive microfiche collection of published literature.

Internal Publications:

International Aerospace Abstracts (semimonthly); Cumulated Index to International Aerospace Abstracts (semiannual and annual).

Reference and Information Services:

Answers inquiries; makes referrals; provides duplication and microfiche services for fee; permits onsite reference.

Information Source:

American Petroleum Institute (API)
1801 K Street, NW
Washington, DC 20006
Phone: (202)833-5690

Director:

McKenna, J. F.

Mission:

To promote the general interests of the petroleum industry in all its branches; to foster foreign and domestic trade in American petroleum products; to afford a means of cooperation with the governments in matters of national concern; and to promote the mutual improvement of the members through the study of arts and sciences connected with the petroleum industry. This is the parent organization of the API-CAIS (Central Abstracting and Indexing Service). See No. S730018.

Major Subject Terms:

Compressed gases; Corrosion properties; Dangerous materials disposal; Ethylene; Explosives; Fire, explosion, and detonations; Flammables; Fuel farm facilities/operations; Fuels; Hydrogen; Launch operations; Liquefied gases; Lubricants; Methane; Nitrogen; Shipping procedures; Shipping regulations; Storage procedures; Transportation procedures; Transportation regulations.

Holdings:

Books; reports and reprints; periodicals; reference lists/bibliographies; standards and specifications; graphics/tables; statistical compilations; films and slides.

Internal Publications:

Books; handbooks/manuals; technical reports; periodicals/journals; newsletters/trade literature; reference lists/bibliographies; magnet tape bibliographic data.

Reference and Query Services:

Questions answered individually; state-of-the-art reviews; advisory and consulting services; referrals. Also Interlibrary loans.

Information Source:

American Society of Safety Engineers (ASSE)
850 Busse Highway
Park Ridge, IL 60068
Phone: (312)692-4121

Director:

Bonner, B. G.

Mission:

To promote the advancement of the safety profession and to contribute to the well-being and professional development of its members.

Research and Development Activities:

Develops accident prevention and loss control information for those directly involved with an accident problem.

Major Subject Terms:

Accidents; Boilers; Cryogenic systems hazards; Fire prevention; Fire protection; Furnaces; Hazard detection systems; Hazardous materials; Hazardous processes; Health hazards; Human factors design; Machinery safety; Man-machine hazards; Personnel training; Pressure; Safety analysis of equipment; Safety engineering; Safety laws; Safety practices; Safety standards.

Holdings:

Standards and specifications.

Internal Publications:

Books; handbooks/manuals; periodicals/journals; newsletters/trade literature; reference lists/bibliographies.

Reference and Query Services:

Questions answered individually; selective dissemination of information; scientific or statistical data retrieval/compilation.

Information Source:

Army Ballistic Research Laboratories (BRL)
Aberdeen Proving Ground, MD 21005
Phone: (301)278-3981

Director:

Eichelberger, R. J., Dr.

Mission:

To develop and provide to other Army agencies the basic tools for the design and evaluation of weapon systems; to innovate the results of BRL research into feasible concepts for advanced weapon systems or components; to provide consultation services to weapons developers and solve specific problems related to the development of systems or arising during the field use of completed systems.

Major Subject Terms:

Propulsion Dynamics: liquid propellants, ignition, combustion, chemical kinetics, temperature distribution and heat transfer, 1-D and 2-D hydrodynamics codes, wear and erosion, gas flow and pressure anomalies, liquid chromatography analysis, chemical intermediates, fiberglass pressure vessels, flame modeling, high nitrogen content propellants, weapon kinematics, pressure oscillations;
Ballistics Protection: propane fuels-ignition and safety, propellant impact, constitutive properties, Hugoniot relationships, pyrophoric alloys, fuel additives, kinetics of halogen inhibition.

Holdings:

Books; reports and reprints; periodicals; graphics/tables; statistical compilations.

Internal Publications:

Technical reports; statistical compilations; periodicals/journals; graphics/tabular materials.

Reference and Query Services:

Questions answered individually.

Information Source:

Arnold Engineering Development Center Library
Arnold Air Force Station
Tullahoma, Tenn 37389
Phone: (615)455-2611 Ext. 7813

Director:

Col. Webster C. English, Jr.

Areas of Interest:

Aerodynamics; aeronautical engineering; rocket propulsion; optics; physics; mathematics; spacecraft; propellants; missiles; rocket motors; telemetry; supersonic flight.

Holdings:

About 30,000 books and 650 periodical titles.

Internal Publications:

Technical reports on results of research and testing projects.

Reference and Query Services:

Answers inquiries; provides reference and literature-searching services; makes interlibrary loans; permits onsite reference. Services are available to engineers, scientists, and military personnel with a need to know.

Remarks:

Conducts environmental tests in aeronautics and aerospace sciences, guided missiles, rocket propulsion and ballistics, simulating flight conditions, develops new testing techniques.

Information Source:

Bureau of Explosives
1920 L Street, NW
Washington, DC 20036
Phone: (202)293-4071

Director: R. M. Graziano

Staff Subject Specialists:

Name	Subject Specialty	Tel. No. and Ext.(x)
Schultz, C. W.	Chemistry; Materials	(201)225-1618
Garland, C. A.	Inspection	(202)293-4077

Mission:

To provide expert and impartial liaison between shippers and the Department of Transportation, provide shippers with a reliable source of information regarding DOT packaging requirements and regulations; act as a central repository to ensure international regulatory uniformity; approve special packages for shipment, provide advice and educational programs on packaging and loading problems.

Major Subject Terms:

Accident/incident investigation; Accident/incident reporting; Cryogenic fluids transportation; Explosions; Explosive devices; Explosive devices tests; Explosive materials; Explosive materials tests; Explosives; Explosives disposal; Explosives safety; Fire extinguishment; Fire fighting; Fire hazard evaluation; Flammability testing; Fuel transportation; Hazardous materials classification; Munitions; Shipping regulations; Transportation.

Holdings:

Reports and reprints; standards and specifications; statistical compilations; films and slides.

Internal Publications:

Handbooks/manuals; technical reports; statistical compilations; newsletters/trade literature; standards and specifications.

Reference and Query Services:

Questions answered individually; selective dissemination of information; analytical studies; advisory and consulting services.

Information Source:

Bureau of Motor Carrier Safety (BMCS)
Federal Highway Administration
400 7th Street, SW
Washington, DC 20590
Phone: (202)426-1790

Director:

Kaye, R. A.

Mission:

To promulgate and administer the Motor Carrier Safety Regulations and the Hazardous Materials Regulations governing trucks and buses operating in interstate or foreign commerce, including for-hire and private carriers of property, for-hire carriers of passengers, and carriers of agricultural commodities, livestock, and horticultural commodities engaged in interstate and foreign commerce.

Research and Development Activities:

Studies truck and bus safety performance, vehicular stresses leading to the degradation of driving, and interrelationships among fatigue, hours of service, and safety of operations of truck and bus drivers; develops written, auditory, and visual tests for drivers and driver training program curricula; develops performance standards and develops new specifications for cargo tanks, studies vehicle performance in connection with determining requirements for parts and accessories necessary to safe operation.

Major Subject Terms:

Accident prevention; Cryogenic fluids handling; Cryogenic fluids transportation; Highway safety; Safety analysis; Safety laws; Shipping procedures; Shipping regulations; Transportation engineering; Transportation procedures; Transportation regulations.

Holdings:

Reports and reprints; specifications; graphics/tables; statistical compilations; films and slides.

Internal Publications:

Handbooks/manuals; technical reports; statistical compilations; graphics/tabular materials; hazardous materials handout materials; notice of proposed rule making; news fliers.

Reference and Query Services:

Questions answered individually; state-of-the-art reviews; analytical studies; advisory and consulting services; referrals; scientific or statistical data retrieval/compilation. Also reproduction/publication services; conferences/symposiums.

Information Source:

Chemical Propulsion Information Agency (CPIA)
Johns Hopkins University Applied Physics Laboratory
8621 Georgia Avenue
Silver Spring, MD 20910
Phone: (301)589-7700 x 560

Director:

Nichols, P. L.

Mission:

To acquire, compile, analyze, and disseminate information pertinent to chemical rocket propulsion; to provide technical and administrative support to the joint Army, Navy, NASA, and Air Force (JANNAF) Interagency Propulsion Committee.

Major Subject Terms:

Bipropellants; Chemical characteristics; Deflagrations; Engine malfunctions; Fire; Fuels; Hazardous characteristics; Hydraulic fluids; Hypergolic Fuels; Jet propulsion fuels; Liquid propellants; Lubricants; Material types; Physical characteristics; Propellants; Propulsion systems; Propulsion types.

Holdings:

Books; abstracts/indexes; reports and reprints; reference lists/bibliographies; standards and specifications. Total number of titles: 46,300; range of years total: 1946 to present.

Internal Publications:

Handbooks/manuals; abstracts; indexes; technical reports; statistical compilations; newsletters/trade literature; conference papers; reference lists/bibliographies; standards and specifications; magnetic tape bibliographic data.

Reference and Query Services:

Questions answered individually; retrospective searches; selective dissemination of information; state-of-the-art reviews; analytical studies; advisory and consulting services; referrals; bibliographic abstracts; scientific or statistical data retrieval/compilation; custom abstracting and indexing services.

Information Source:

Combustion Institute
986 Union Trust Building
Pittsburgh, PA 15219
Phone: (412)391-1366

Director:

Barnes, H. G.

Mission:

To promote the science and application of combustion and to disseminate knowledge in this field.

Research and Development Activities:

Collects and disseminates results of combustion research.

Major Subject Terms:

Explosives; Explosives safety; Fire prevention; Heat dissipation; Propellants and fuels; Pyrotechnic materials.

Holdings:

None

Internal Publications:

Periodicals/journals; newsletters; conference papers.

Reference and Query Services:

Referrals.

Information Source:

Compressed Gas Association, Inc. (CGA)
500 Fifth Avenue
New York, NY 10036
Phone: (212) 524-4796

Director:

Lenhard, R. E.

Mission:

To provide, develop, and coordinate technical activities in the compressed gas industries, including end uses of products, in the interest of safety and efficiency, and to serve, to the fullest extent, the best interest of the public and industry.

Major Subject Terms:

Compressed gases; Safety; Dangerous materials; Dangerous materials disposal; Explosives; Flammables; Fuel farm facilities/operations; Handling procedures; Liquefied gases; Quantity/distance criteria; Shipping procedures; Shipping regulations; Transportation procedures; Transportation regulations.

Holdings:

Books; reports and reprints; standards and specifications.

Internal Publications:

Handbooks and manuals; technical reports; newsletters and trade literature; conference papers; standards and specifications.

Reference and Query Services:

Questions answered individually.

Information Source:

Cryogenic Data Center (CDC)
National Bureau of Standards
Institute for Basic Standards
Boulder, CO 80302
Phone: (303)499-1000 x 3527

Director:

Olien, N. A.

Staff Subject Specialists:

<u>Name</u>	<u>Subject Specialty</u>	<u>Tel. No. and Ext. (x)</u>
Olien, N. A.	Cryogenic safety	(303)499-1000 x 3257
Roder, H. M.	<u>Oxygen</u>	(303)499-1000 x 3528
McCarty, R. D.	<u>Hydrogen; Helium</u>	(303)499-1000 x 3386
Hanley, H. J. M.	<u>Transport properties</u>	(303)499-1000 x 3320

Mission:

To critically evaluate and compile data on the thermodynamic, transport, and other thermophysical properties of the principal fluids used at low temperatures; to operate an information storage and retrieval system for the properties of materials at low temperatures.

Research and Development Activities:

Prepares state-of-the-art reviews and produces standard reference data on the thermodynamic and transport properties of the technically important gases. Current tasks include helium, hydrogen, methane, and fluid mixtures.

Major Subject Terms:

Chemical characteristics; Cryogenic safety; Equation of State; Liquid propellants; Nitrogen; Oxygen; Physical characteristics; Specific heat; Temperature; Thermal conductivity; Thermal properties; Thermodynamic properties; Transport Properties.

Holdings:

Books: 1,000; abstracts/indexes: 200; reports and reprints: 30,000; periodicals: 50,000; reference lists/bibliographies: 2,000; standards and specifications: 500; graphics/tables: 500; statistical compilations: 800. Total number of titles: 95,000; range of years of total: 1900 to present.

Internal Publications:

Book catalogs; abstracts; indexes; technical reports; statistical compilations; periodicals/journals; newsletters/trade literature; reference lists/bibliographies; standards and specification; graphics/tabular materials; magnetic tape bibliographic data.

Reference and Query Services:

Questions answered individually; retrospective searches; selective dissemination of information; state-of-the-art reviews; analytical studies; advisory and consulting services; bibliographic abstracts; scientific or statistical data retrieval/compilation; translations; custom abstracting and indexing services; weekly and quarterly subscription services.

Information Source:

Defense Documentation Center (DDC)
Cameron Station
Alexandria, VA 22314
Phone (202) 274-6881

Administrator:

Mr. Hubert E. Sauter

Mission:

To collect, process, announce, retrieve, and supply formally recorded technical information in all of the scientific disciplines and engineering fields of interest to the Department of Defense.

Research and Development Activities:

Supports all DoD research, development, test and evaluation activities as the centralized technical documentation service of DoD. The Center also operates computerized data banks pertaining to on-going and planned Defense RDT&E activities.

Major Subject Terms:

Atmospheric sciences; Behavioral sciences; Biological sciences; Chemistry; Civil engineering; Earth sciences; Electrical/electronics engineering; Mathematical sciences; Nuclear sciences; Oceanography; Physical sciences; Physics; Space sciences.

Holdings:

Abstracts/indexes; reports and reprints: 1,000,000; reference lists/bibliographies pertaining to reports of completed R&D activities. Summaries of current DoD-sponsored R&D efforts: 75,000 (21,000 active and 54,000 completed). Summaries of planned DoD R&D efforts: 10,000.

Reference and Query Services:

Questions answered individually; retrospective searches; selective dissemination of information; referrals; scientific or statistical data retrieval/compilation.

Note:

The Center's services are available to all Federal government agencies and to their contractors, subcontractors and grantees.

Information Source:

Emery Industries, Inc.
Research Library
4900 Este Ave.
Cincinnati, Ohio 45232

Director:

B. A. Bernard

Areas of Interest:

Chemical technology of fats, oils, and fatty acids; organic chemistry; chemical engineering; ozone; polymerizing of unsaturated acids for use in urethane foams, corrosion inhibitors, and surface-coating resins; use of fatty acids and derivatives in plastics, synthetic detergents and emulsifiers, lubricants and greases, textiles, paint and protective coatings, cosmetics, toiletries; testing methods; patents.

Holdings:

5,000 books and journals; complete sets of Chemical Abstracts, Chemical Review, and Analytical Chemistry; microcards of U.S. chemical patents (1950 to 1966); microfilm of U.S. chemical patents; Government bulletins, commercial literature.

Internal Publications:

Bulletins; catalogs of Company products and processes.

Reference and Query Services:

Makes interlibrary loans; provides restricted duplication services; provides services primarily to Company personnel and customers.

Information Source:

Energy Research and Development Administration
Technical Information Center
P.O. Box 62
Oak Ridge, TN 37830
Phone: (615)483-8611 x 3-4352

Manager:

Shannon, Robert L.

Staff Subject Specialists:

Name	Subject Specialty	Tel. No. and Ext.(x)
Shannon, Robert L.	Technical information	(615)483-8611 x 3-4352
Bost, David E.	Technical information	(615)483-8611 x 3-4426

Mission:

To encourage the dissemination of scientific and technical information relating to atomic energy in order to provide that free interchange of ideas and criticisms which is essential to scientific and industrial progress and public understanding.

Research and Development Activities:

Publishes compilations of on-going research projects on energy, primarily Nuclear Science Abstracts.

Major Subject Terms:

Accident/incident investigation; Accident/incident reporting; Aerospace nuclear safety; Dangerous industrial radiation; Extraterrestrial environmental hazards; Ionizing radiation; Nuclear blast; Nuclear radiation; Nuclear safety; Radioactive decontamination; Radiation detection; Radiation effects; Radiation protection; Radiation resistance; Radiation tolerance levels; Radioactive wastes; Solar radiation; Fuels.

Holdings:

Reports and reprints: 400,000; films and slides: 400+.

Internal Publications:

Book catalogs; books; abstracts; indexes; technical reports; statistical compilations; conference papers; reference lists/bibliographies.

Reference and Query Services:

Questions answered individually; retrospective searches; prior art/patent searches; advisory and consulting services; referrals; bibliographic abstracts; translations.

Information Source:

Factory Mutual Research Corporation (FMRC)
1151 Boston-Providence Turnpike
Norwood, MA 02062
Phone: (617)762-4300; TLX 92-4415

Director:

Miller, M. J.

Mission:

To further the refinement of technology that will lead to more effective prediction, prevention, and control of fires.

Research and Development Activities:

Performs research in areas dealing with fire and other hazards and their interaction with man, the enclosures he uses and his community.

Major Subject Terms:

Airport emergency facilities/equipment; Commercial aviation; Cryogenic safety; Dangerous materials; Explosives safety; Fire; Fire, explosion, and detonations; Lightning; Mechanics of structural failure; Nuclear fuels; Nuclear power plant operation; Nuclear power plant safety design; Radiation detection; Radiation monitoring; Radioactive decontamination; Radioactive spills; Safety analysis; Safety standards; Structural materials limitations.

Holdings:

Books: 2,500; abstracts/indexes; reports and reprints; periodicals: 130; reference lists/bibliographies; standards and specifications; graphics/tables; statistical compilations; films and slides. Range of years of total: 1843 to present.

Internal Publications:

Book catalogs; books; handbooks/manuals; abstracts; indexes; technical reports; statistical compilations; periodicals/journals; newsletters/trade literature; conference papers; reference lists/bibliographies; standards and specifications; graphics/tabular materials.

Reference and Query Services:

Questions answered individually; retrospective searches; selective dissemination of information; prior art/patent searches; state-of-the-art reviews; analytical studies; advisory and consulting services; referrals; bibliographic abstracts; scientific or statistical data retrieval/compilation; translations; custom abstracting and indexing services.

Information Source:

Institute of Gas Technology (IGT)
3424 South State Street
Chicago, Illinois 60616
Phone: (312)255-9600

Director:

Linden, H. R.

Staff Subject Specialists:

Name	Subject Specialty	Tel. No. and Ext.(x)
Seay, J. G.	Energy Supply	(312)225-9600 x 1497
Larson, D. H.	Combustion and Energy Utilization	(312)225-9600 x 660
Gregory, D. P.	Advanced Energy Systems, Hydrogen, Fuel Cells, Solar	(312)225-9600 x 638
Anderson, P. J.	Cryogenic Systems, LNG	(312)225-9600 x 846
Bodle, W. W.	Process Evaluation	(312)225-9600 x 625
Lee, B. S.	Coal Gasification	(312)542-7000
Duncan, D. A.	Hydrocarbon Processes	(312)225-9600 x 1455
Kniebes, D. V.	Analytical and Technical Services	(312)225-9600 x 613
Mensch, H. L.	Technical Information	(312)225-9600 x 604
Waterman, W. W.	Education and Training	(312)225-9600 x 604

Mission:

To serve the energy industries through education, research, and the dissemination of technical information.

Research and Development Activities:

Basic and applied research, and advanced development through prototype hardware and process pilot plants. Related economic and market evaluation studies. Development of specialized analytical techniques. Projects in supply, storage, transportation and utilization of all energy forms in residential, commercial and industrial sector, and advanced energy systems.

Major Subject Terms:

Analytical; Catalysis; Coal; Combustion; Combustion products; Cryogenics; Energy storage; Energy transportation; Fossil fuels; Fuel cells; Gasification; Hydrogen; Hydrogenation; Methane; Natural gas; Nitrogen oxides; Oil; Oil shale; Pollution control; Safety; Solar; Sulfur; Sulfur compounds; Syngas.

Holdings:

Books: 18,000; industry and Government reports: 5,000; IGT staff reports and reprints: 5,500; periodicals: 9,000; reference lists/bibliographies: 1,000.

Publications:

Gas Abstracts (monthly); Gas Scope (quarterly); Gas Supply Review (monthly); International Gas Technology Highlights (biweekly); IGT Research Bulletin Series (intermittent).

Reference and Query Services:

Questions answered individually; retrospective searches; selective dissemination of information; state-of-the-art reviews; analytical studies; advisory and consulting services; bibliographic abstracts; custom abstracting and indexing services.

Information Source:

Invex, Inc.
P.O. Box 610205
North Miami, Fla. 33161
Phone: (305)696-0953

Areas of Interest:

Uses of ozone in sanitary engineering, including production of potable water, treatment of domestic and industrial waste water, and control of water pollution; ozone generators for sanitary engineering applications.

Holdings:

Books, periodicals, reports, standards and specifications, reviews, newsletters, reprints, bibliographies, pamphlets, clippings, project records, chemical analyses, data.

Internal Publications:

Pamphlets, product brochures.

Reference and Query Services:

Answers inquiries; makes referrals; provides consulting, bibliographic, and literature-searching services; prepares technical summaries; provides training in the use of ozone and ozone generators; permits onsite use of literature collection.

Information Source:

Materials Documentation Center (MDC)
University of Dayton Research Institute
KL 445
Dayton, Ohio 45469
Phone: (513)229-3711 or 255-2160/5197

Project Leader:

March, J. F.

Mission:

To serve the information needs of the entire scientific and technical staff of the Air Force Materials Laboratory (AFML) and other government organizations.

Research and Development Activities:

Testing and development of new aerospace materials; making flight load studies and performing other flight dynamics research; performing statistical studies of aircraft ground fire suppression and rescue.

Major Subject Terms:

Atmospheric sciences; Behavioral sciences; Biological sciences; Chemistry;
Civil engineering; Earth sciences; Electrical/electronics engineering;
Mathematical sciences; Nuclear sciences; Oceanography; Physical sciences;
Physics; Space sciences.

Holdings:

Books; abstracts/indexes; reports and reprints; periodicals; reference lists/
bibliographies; graphics/tables; statistical compilations.

Internal Publications:

Books; handbooks/manuals; abstracts; indexes; technical reports; statistical
compilations; periodicals/journals; newsletters/trade literature; conference
papers; reference lists/bibliographies.

Reference and Query Services:

Retrospective searches; on-line searches; selective dissemination of information;
state-of-the-art reviews; analytical studies; bibliographic abstracts; scientific
or statistical data retrieval/compilation; custom abstracting and indexing services.

Information Source:

Midwest Research Institute (MRI)
426 Volker Boulevard
Kansas City, MO 64110
Phone: (816)561-0202

Director:

Kimball, C. N.

Staff Subject Specialists:

Name	Subject Specialty	Tel. No. and Ext. (x)
Hubbard, H. M.	Physical and Analytical Chemistry	(816)561-0202
McElroy, A. D.	Inorganic Chemistry, Chemical Processes	(816)561-0202

Mission:

To define precise areas of individual client needs and provide him with a practical and realistic solution to his problem, within specific time and cost dimensions.

Research and Development Activities:

Conducts research in pollution control, education, law enforcement, business planning, traffic safety, drug abuse, cancer, effects of pesticides, bacteriology, immunology, virology, pharmacology, toxicology, biochemistry, biophysics, inorganic chemistry, organic chemistry, high temperature chemistry, process chemistry and engineering, chemical and biochemical detection, biomedical materials, technology assessment, and other subject areas.

Major Subject Terms:

Air pollutants; Cryogenic systems materials selection; Environmental influences; Fire and explosion chemistry; Human characteristics; Human factors design; Hydraulic fluids; Industrial safety; Instruments; Lubricants; Propellants and fuels; Safety engineering; Space simulation operations; Stress/strain analysis; Structural materials properties.

Holdings:

Books: 4,500; abstracts/indexes: 15; reports and reprints: 7,000; periodicals: 600; reference lists/bibliographies: 25; standards and specifications: 500; statistical compilations: 50. Total number of titles: 12,690; range of years of total: 1943 to present.

Internal Publications:

Handbooks/manuals; technical reports; statistical compilations; newsletters/trade literature; conference papers; reference lists/bibliographies.

Reference and Query Services:

Questions answered individually; retrospective searches; selective dissemination of information; prior art/patent searches; state-of-the-art reviews; analytical studies; advisory and consulting services; referrals; bibliographic abstracts; scientific or statistical data retrieval/compilation.

Information Source:

NASA Scientific and Technical Information Office
Office of Industry Affairs and Technology
Utilization

Code: KS
Washington, DC 20546
Phone: (202)755-3548

Director:

Pryor, H. E.

Mission:

To collect, process, and announce scientific and technical information on worldwide aerospace research and development activities, and to disseminate this knowledge to the international scientific community.

Major Subject Terms:

Aeronautics; Astronautics; Social sciences; Biological sciences; Chemistry and materials; Geological sciences; Engineering; Mathematical and computer sciences; Physics; Space sciences.

Holdings:

Books; abstracts/indexes; reports and reprints; periodicals; reference lists/bibliographies; graphics/tables; statistical compilations. Total number of titles: 1,200,000; range of years of total: 1961 to present, not including 250,000 NACA documents dating back to 1915.

Internal Publications:

Books; handbooks/manuals; abstracts; indexes; technical reports; statistical compilations; periodicals/journals; conference papers; reference lists/bibliographies; graphics/tabular materials; magnetic tape bibliographic data.

Reference and Query Services:

Retrospective searches; selective dissemination of information; state-of-the-art reviews; referrals; bibliographic abstracts; scientific or statistical data retrieval/compilation; translations; abstracting and indexing services.

Information Source:

National Fire Protection Association (NFPA)
470 Atlantic Avenue
Boston, MA 02210
Phone: (617)482-8755

Director:

Morgan, C. S.

Staff Subject Specialists:

<u>Name</u>	<u>Subject Specialty</u>	<u>Tel. No. and Ext.(x)</u>
Slifka, M.	Fire protection	(617)482-8755
Stevens, R. E.	Structural engineering	(617)482-8755
Babcock, C. I.	Plastics, Chemicals	(617)482-8755
Woodworth, M. E.	Propellants and fuels	(617)482-8755
Walls, W. L.	Dangerous materials, gases	(617)482-8755
Grimes, M. E.	Fire fighting, public protection	(617)482-8755
Willey, A. E.	Fire hazard evaluation, statistics	(617)482-8755

Mission:

To promote the science and improve the methods of fire protection and prevention; to obtain and circulate information; and to secure the cooperation of its members and the public in establishing proper safeguards against loss of life and property by fire.

Research and Development Activities:

Conducts research on public fire protection and fire loss experience.

Major Subject Terms:

Accidents; Chemical hazards; Cryogenic safety; Dangerous materials disposal; Explosives safety; Fire; Fire, explosion, and detonations; Fire point; Fire protection; Flash point; Fuel handling; Fuel storage; Fuel transportation; Hazard detection systems; Quantity/distance criteria; Shipping procedures; Shipping regulations; Transportation procedures; Transportation regulations.

Holdings:

Books; reports and reprints; periodicals; standards and specifications; statistical compilations; films and slides.

Internal Publications:

Books; handbooks/manuals; indexes; technical reports; statistical compilations; periodicals/journals; newsletters/trade literature; standards and specifications.

Reference and Query Services:

Questions answered individually; retrospective searches; state-of-the-art reviews; analytical studies; advisory and consulting services; referrals; scientific or statistical data retrieval/compilation.

Information Source:

National Technical Information Service (NTIS)
5285 Port Royal Road
Springfield, VA 22151
Phone (703)321-8500

Director:

Knox, W. T.

Mission:

Is a central source for the public sale of Government-sponsored research, development and engineering reports and other analyses prepared by Federal agencies, their contractors or grantees. And, it is a central source for Federally generated machine processible data files.

Major Subject Terms:

Aeronautics; Agriculture; Astronomy and Astrophysics; Atmospheric Sciences; Behavioral and Social Sciences; Biological and Medical Sciences; Chemistry; Earth Sciences and Oceanography; Electronics and Electrical Engineering; Energy Conversion (Non-Propulsive); Materials; Mathematical Sciences; Mechanical, Industrial, Civil, and Marine Engineering; Methods and Equipment; Military Sciences; Missile Technology; Navigation, Communications, Detection, and Countermeasures; Nuclear Science and Technology; Ordnance; Physics; Propulsion and Fuels; and Space Technology.

Holdings:

Books; abstracts/indexes; reports and reprints; periodicals; reference lists/bibliographies; standards and specifications; graphics/tables; statistical compilations; magnetic tapes. Total number of titles: 800,000 range of years total: 1948 to date.

Internal Publications:

Book catalogs; books; handbooks/manuals; abstracts; indexes; periodicals/journals; reference lists/bibliographies; magnetic tape bibliographic data; weekly newsletters in 24 subject categories; Standing Order Microfiche Service (SRIM).

Reference and Query Services:

Questions answered individually; retrospective searches; selective dissemination of information; prior art/patent searches; state-of-the-art reviews; referrals; bibliographic abstracts; scientific or statistical data retrieval/compilation; translations.

Information Source:

Naval Weapons Center Technical Library
China Lake, California 93555
Phone: (714)939-2507

Director:

LaFon, Snowden, E.

Major Subject Terms:

Naval research; Rockets; Weapon systems; Chemistry; Electronic countermeasures; Explosives; Fire control systems; Guided missiles; Propulsion; Semiconductors.

Holdings:

200,000 items in the collection. A comprehensive collection of OSRD reports is maintained.

Internal Publications:

The station issues annually a supplement to 'Bibliography of NWC Technical Publications.' The 1970 supplement is AD-515 625L, starting in 1957, open-literature publications, technical motion pictures - patents were included in the bibliography, reports are available thru DDC.

Reference and Query Services:

Types of services, duplicating, reference service, indexing, literature surveys, loans, referral, technical answers, visitor reference, types of materials, abstract journals, books, classified materials, government reports, proprietary information, periodicals, science, translations, unpublished materials.

Remarks:

The Technical Library contains primarily research, testing and evaluation reports on fuels, missiles, rockets, propellants, explosives, electronics and high temperature materials.

Information Source:

North Carolina Science and Technology
Research Center (NC/STRC)
Box 12235
Research Triangle Park, NC 27709
Phone: (919)549-8291

Director:

Chenery, P. J.

Mission:

To operate a NASA-sponsored regional dissemination center to assist industry and research organizations in the southeastern United States to solve their technical problems.

Research and Development Activities:

Grants for research by parent organization.

Major Subject Terms:

Atmospheric sciences; Behavioral sciences; Biological sciences; Chemistry; Civil engineering; Earth sciences; Electrical/electronics engineering; Mathematical sciences; Nuclear sciences; Oceanography; Physical sciences; Physics; Space sciences.

Holdings:

Abstracts/indexes; reports and reprints; periodicals; reference lists/bibliographies; standards and specifications; graphics/tables; statistical compilations.

Internal Publications:

Handbooks/manuals; indexes; technical reports; newsletters/trade literature; reference lists/bibliographies; magnetic tape bibliographic data.

Reference and Query Services:

Questions answered individually; retrospective searches; selective dissemination of information; prior art/patent searches; state-of-the-art reviews; advisory and consulting services; referrals; bibliographic abstracts; scientific or statistical data retrieval/compilation; custom abstracting and indexing services.

Information Source:

Oak Ridge Gaseous Diffusion Plant Library
Union Carbide Corp., Nuclear Division
P.O. Box P
Oak Ridge, Tenn. 37830
Phone: (615)483-8611 Ext. 3-3264

Director:

Ferguson, J. B.

Areas of Interest:

Chemistry; physics; engineering; metallurgy; mathematics; statistics; stable isotope separation methods; fluorine chemistry; mass spectroscopy; metallic and nonmetallic materials; corrosion; instrumentation; fluid mechanics; industrial management; computing sciences.

Holdings:

27,500 books; 10,000 bound journals; 66,000 paper copies and 236,000 microfiches of reports; patents, data.

Internal Publications:

Reports, bibliography, translations.

Reference and Query Services:

Provides reference services; makes interlibrary loans; permits onsite reference by those with need-to-know.

Information Source:

Office of Standard Reference Data (NSRDS)
National Bureau of Standards
Washington, DC 20234
Phone: (301)921-1000 Ext. 2467

Director:

Lide, D. R.

Mission:

To promote optimum dissemination and accessibility of data on physical and chemical properties of well-characterized materials; to promote the development of the National Standard Reference Data System; to compile and critically evaluate property data.

Major Subject Terms:

Chemical characteristics; Chemical hazards; Compressed gases; Contamination; Corrosion characteristics; Cryogenic systems hazards; Cryogenic systems materials selection; Explosives; Fire retardant materials; Flammables; Hazardous materials; Liquefied gases; Materials types; Oxidation; Physical characteristics; Pyrotechnics; Radiation effects; Shock and vibration; Stress; Structural materials limitations.

Holdings:

Books; abstracts/indexes; reports and reprints; periodicals; reference lists/bibliographies; graphics/tables; Total number of titles: 2,200.

Internal Publications:

Compilations of physical and chemical property data; critical reviews; bibliographies and data indexes; newsletters.

Reference and Query Services:

Questions answered individually; state-of-the-art reviews; referrals; scientific data retrieval/compilation; translations.

Information Source:

Pittsburgh Mining and Safety Research Center (PMSRC)
Bureau of Mines
4800 Forbes Avenue
Pittsburgh, PA 15213
Phone: (412)892-2400

Director:

Van Dolah, R. W.

Staff Subject Specialists:

Name	Subject Specialty	Tel. No. and Ext.(x)
Van Dolah, R. W.	Fire, explosion, and detonations; Safety codes/standards/specifications	(412)892-2400 x 600
Palowitch, E. R.	Mining	(412)892-2400 x 602
Burgess, D. S.	Fire, explosion, and detonations	(412)892-2400 x 624
Courtney, W. G.	Life support, respirable dust	(412)892-2400 x 364
Goode, C. A.	Mining	(412)892-2400 x 607
Murphy, J. N.	Man-machine hazards	(412)892-2400 x 615
Watson, R. W.	Explosives	(412)892-2400 x 650
Fowkes, R. S.	Materials handling	(412)892-2400 x 628

Mission:

To maintain research and technological work of the Bureau of Mines, primarily in the field of explosives, explosions, and flames, and health-related hazards associated with the mine environment.

Research and Development Activities:

Conducts research on mine accidents involving illumination, electricity, noise, haulage; causes, prevention, and effects of gas and dust explosions and fires; control of respirable coal mine dust on life-support systems.

Major Subject Terms:

Accident/incident investigation; Air pollution control; Atmospheric monitoring; Biomedical engineering; Breathing apparatus; Carbon dioxide; Carbon monoxide; Combustible gas detectors; Escape; Explosions; Explosives; Explosives safety; Fire and explosion dynamics; Fire extinguishment; Fire fighting; Life support systems; Mining; Safety laws; Safety regulations; Safety standards.

Holdings:

Abstracts/indexes: 10; reports and reprints: 15,000; periodicals: 70; reference lists/bibliographies: 10. Total number of titles: 16,000; range of years of total: 1933 to present.

Internal Publications:

Technical reports; periodicals/journals; conference papers; reference lists/bibliographies; standards and specifications; graphics/tabular materials.

Reference and Query Services:

Questions answered individually; analytical studies.

Information Source:

Redstone Scientific Information Center (RSIC)
US Army Missile Research, Development,
and Engineering Laboratory
Redstone Arsenal, AL 35809
Phone: (205)876-3251

Director:

Terry, John E.

Mission:

To furnish scientific and technical information support to the Marshall Space Flight Center, the US Army Missile Command, and other local DoD agencies and their local contractors.

Research and Development Activities:

Receives technical reports from research and development sources (Government and contractors).

Major Subject Terms:

Atmospheric sciences; Behavioral sciences; Biological sciences; Chemistry; Civil engineering; Earth sciences; Electrical/electronics engineering; Mathematical sciences; Nuclear sciences; Oceanography; Physical sciences; Physics; Space sciences.

Holdings:

Books: 200,000; abstracts/indexes; reports and reprints: 1,300,000; periodicals: 3,000; reference lists/bibliographies; statistical compilations; films and slides.

Internal Publications:

Book catalogs; handbooks/manuals; reference lists/bibliographies.

Reference and Query Services:

Questions answered individually; retrospective searches; selective dissemination of information; state-of-the-art reviews; referrals; bibliographic abstracts; translations.

Information Source:

Safety of Explosive Ordnance Databank (SAFEORD)
US Naval Weapons Laboratory
Dahlgren Laboratory
Code TWT-FH
Dahlgren, VA 22448
Phone: (703)663-7201

Director:

Hanzel, F. J.

Staff Subject Specialists:

<u>Name</u>	<u>Subject Specialty</u>	<u>Tel. No. and Ext.(x)</u>
Hanzel, F. J.	Explosives and Weapons Systems	(703)663-7201
Fitzpatrick, J. G.	Explosives	(703)663-8171

Mission:

To store and provide rapid retrieval of safety information relative to naval weapons systems in the Fleet and under development, including Launching Platforms and Shore Stations.

Major Subject Terms:

Weapons systems; Air, Surface and Underwater launched; Weapons Systems components; Environmental Test Programs and results; Design and Safety Evaluation; Fault Tree and Hazard Analyses; Explosives; Explosives disposal; Explosives Safety; Explosives technology; Initiator materials; Initiators safety; Initiators technology; Ammunition; Propellants; Propellants and fuels; Pyrotechnic materials; Pyrotechnic safety; Pyrotechnic technology; Waivers and Exemptions for Ammunition, propellants and Shore Stations.

Holdings:

Reports and reprints; standards and specifications; graphics/tables; statistical compilations.

Internal Publications:

Indexes; technical reports; statistical compilations.

Reference and Query Services:

Questions answered individually; retrospective searches; referrals; scientific or statistical data retrieval/compilation.

Information Source:

Southwest Research Institute
8500 Culebra Road
PO Drawer 28510
San Antonio, TX 78284
Phone: (512)684-5111 Ext. 2122

Director:

Hoffman, H. I.

Mission:

To conduct industrial research; to work in the public interest in cooperation with industry, government, and individuals to produce a better life through science and technology.

Major Subject Terms:

Aircraft problems; Cryogenic safety; Dangerous materials; Fire, explosion, and detonations; Hydraulic fluids; Industrial safety and health; Launch base operations; Lubricants; Man-machine hazards; Nuclear safety; Propellants and fuels; Quality control; Reliability; Space vehicle problems; Structural failure; Tests.

Holdings:

Books; abstracts/indexes: reports and reprints; periodicals; standards and specifications; graphics/tables; statistical compilations.

Internal Publications:

Handbooks/manuals; indexes; technical reports; statistical compilations; periodicals/journals; newsletters.

Reference and Query Services:

State-of-the-art reviews; experimental and analytical studies; advisory and consulting services; research and development.

Information Source:

Technology Applications Center
University of New Mexico
Albuquerque, New Mexico 87131
Phone: (505)277-3118

Director:

Schinnick, W. A.

Mission:

To function as a NASA Industrial Applications Center and to exploit the aerospace research and development applications to the private sector.

Major Subject Terms:

Engineering; Hard and soft sciences; Business; Management; Education.

Holdings:

Books; abstracts/indexes; reports and reprints; periodicals; reference lists/bibliographies; standards and specifications; graphics/tables; statistical compilations; computer discs and tapes.

Internal Publications:

Abstracts; indexes; reference lists/bibliographies; magnetic tape bibliographic data; special reports; energy bibliographies.

Reference and Query Services:

Retrospective search services, state of the art searches on request, prepare bibliographic searches in the field of energy, feasibility studies, and special products requests by industry.

Information Source:

Thermophysical and Electronic Properties
Information Analysis Center (TEPIAC)
Purdue University
Purdue Industrial Research Park
2595 Yeager Road
West LaFayette, IN 47906
Phone: (317)463-1581

Director:

Touloukian, Y. S.

Staff Subject Specialists:

Name	Subject Specialty	Tel. No. and Ext.(x)
Touloukian, Y. S.	Thermodynamics	(317)463-1581
Shafer, W. H.	Thermophysical properties	(317)463-1581

Mission:

To become a world center for research and the collection, analysis, correlation, and dissemination of thermophysical properties information; and to promote a better understanding of this subject in education, science, and industry.

Research and Development Activities:

Briefly stated, TEPIAC's activities consist of the following: locates, obtains, catalogs, codes, and evaluates research documents; makes literature searches; stores, retrieves, and makes available technical papers (on microfiche); performs data analyses, syntheses, estimations, and recommendations; generates reference data tables; performs theoretical and experimental research; and provides technical advisory and consulting services.

Major Subject Terms:

Density; Entropy; Specific heat; Thermal conductivity; Thermal properties; Thermodynamic properties; Viscosity; Emittance; Reflectance; Solar absorptance to emittance ratio; Prandtl number; Dielectric constant; Dielectric strength.

Holdings:

Abstracts/indexes: 70,000; reports and reprints: 65,000. Total number of titles: 35,000; range of years of total: 1900 to present.

Internal Publications:

Books; handbooks/manuals; technical reports; statistical compilations; newsletters/trade literature; graphics/tabular materials; magnetic tape bibliographic data.

Reference and Query Services:

Questions answered individually; retrospective searches; analytical studies; advisory and consulting services; scientific or statistical data; retrieval/compilation; translations.

Information Source:

United Technology Center
A Division of United Aircraft Corp.
P.O. Box 358
Sunnyvale, CA 94088
Phone: (408) 739-4880

Director:

Wilcox, H. E., Supervisor, Library Services
Tygar, M., Program Development Manager

Areas of Interest:

Rocket and ramjet propulsion (solid, hybrid propellant rocket motors and ramjets); solid rocket propellants; chemical kinetics; high temperature thermodynamics and materials; ablation; advanced fuels, engines, and control techniques; ignition systems; glass-filament motor casings; thrust vector control steering; extended duration nozzles; rocket testing facilities.

Holdings:

7,000 books and bound periodicals; 150 subscriptions; 15,000 technical reports.

Internal Publications:

Technical reports, standards and specifications, abstracts, indexes, pamphlets, bibliographies, posters and other display materials, news releases.

Reference and Query Services:

Answers inquiries; provides duplication, and limited literature-searching services for UTC personnel.

Information Source:

Wright-Patterson AFB Ohio Technical Library
2750th ABW/SSL, Bldg. 12,
Wright-Patterson Air Force Base, Ohio 45433
Phone: (513) 255-2438

Director:

Parker, G. P.

Major Subject Terms:

Aeronautics; Astronautics; Logistics; Propulsion systems; Aircraft;
Aircraft equipment; Aircraft landings; Medical research; Physics, Chemistry;
Mathematics; Electronics

Holdings:

110,000 volumes, 90,000 technical reports including Air Force, NACA and
NASA reports. Special collections: Lahm and Chandler Historical Collection
(Aeronautics).

Reference and Query Services:

Reference service, loans (interlibrary), referral, types of materials, books,
abstract journals, periodicals, science, scientific technical data, government
reports

Remarks:

Specializes in basic research in support of aeronautics and astronautics.